

Oregon

Firm developing airborne wind energy system

Kite attached to generator marketed to farmers

By ERIC MORTENSON
Capital Press

A Beaverton, Ore., company received a \$600,000 USDA grant to continue research and development of a wind energy system they will first market to farmers.

The company, eWind Solutions Inc., is developing a tethered, rigid-wing kite that spins an electrical generator as it deploys in a cork-screw pattern 300 to 500 feet in the air. The system can be programmed to continuously deploy and retract the kite, generating electricity the landowner can sell back to the utility grid or use on-farm. Company partners say a system will provide enough energy to power five homes or one small to mid-size farm.

Once the kite reaches its maximum altitude — no more than 500 feet to conform with federal regulations — it brings itself down, said Katie Schaefer, eWind's director of strategic partnerships. The device uses 4 percent of the power it created on launch to retract itself to a lower altitude, then rises again to continue energy production.

If the wind isn't right, the kite comes all the way down and docks itself. The station required is about the size of a small shipping container or a large pickup truck, Schaefer said.

The concept has previously won funding from Oregon BEST, a spinoff of the state business department that connects clean-tech entrepreneurs with money and with university researchers who can help with technical aspects. In



Courtesy of eWind Solutions

Sean Mish, director of systems integration, works on a prototype of a kite-like device that spins an electrical generator as it is deployed. The Beaverton, Ore., company, eWind Solutions, won a \$600,000 USDA development grant.

2015, eWind was granted a \$100,000 startup grant from the USDA's National Institute of Food and Agriculture. The new grant also is from NIFA.

Schaefer said the company is pursuing development grants from the U.S. Department

of Energy. The company is about nine months away from being ready to approach private investors; she estimated the company will need \$3 million to \$5 million to gear up for commercial production, possibly in 2018. Schaefer's husband, David, is the company founder and CEO.

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The company chose agriculture as its first niche for the technology because farmers generally have uncluttered air space above their farm, Katie Schaefer said.

"We don't need their land, we just need the space above it," she said.

She said dairies or other operations with high power requirements might be a good market. Wineries have shown early interest, she said, in part for branding purposes and the "wow" factor, and also for potential side benefits such as bird deterrence.

Schaefer estimated a system would cost \$45,000 to \$50,000. She said an airborne system provides more electricity than solar panels and takes less room. Wind turbines are larger, more ponderous and aren't built high enough to catch wind all the time, she said, while eWind's device would operate at higher altitudes where wind is more consistent. Unlike solar, they also can operate at night.

The company's long range vision is to take the technology worldwide after getting established with farmers, Schaefer said.

The system could be used to provide emergency electrical power in disaster relief cases, or where the power grid has been compromised or doesn't exist, she said.



Courtesy of the America Tree Farm System

From left to right are Dean Defrees, Sharon Defrees, Dallas Hall and Lyle Defrees. The Baker County, Ore., family has been honored as the National Outstanding Tree Farmers of the Year by the American Tree Farm System.

E. Oregon family wins national tree farmer award

By MITCH LIES
For the Capital Press

For the first time in the 75-year history of the American Tree Farm System, an Eastern Oregon tree farmer has been named the National Outstanding Tree Farmer of the Year.

And it comes from the unlikely site of a valley more famous for gold dredges than tree farming.

The Defrees family is from Baker County's Sumpter Valley, site of three historic gold dredges. They will receive the award at a Dec. 6 reception on Capitol Hill in Washington, D.C.

The American Tree Farm System announced the winner Nov. 1, the culmination of a 16-month process for the family that started with being named Baker County Tree Farmer of the Year in June 2015.

"It was a long process and it kept us on pins and needles," said Dean Defrees, who co-manages the farm with other family members.

Defrees said the family was "extremely humbled and thrilled" to hear they won the award. "Especially because we knew what kind of competition we were up against," he said.

The award annually honors exceptional sustainable forest management and leadership qualities.

Oregon State University Baker County Extension Forester Bob Parker, who nominated the Defrees family, said Dean and his father, Lyle, and the rest of the family exemplify the award's qualifications.

"Lyle was really active in running the small woodland chapter here and provided a lot of assistance for me in developing programming," Parker said. "I've spent a lot of time on his property. They do a superb job of managing their lands."

The Defrees family has also been active on Oregon Department of Forestry regional committees, said Jamie Knight, a department spokeswoman based in La Grande. Between them, Lyle and Dean have served on the Northeast Oregon District Budget Committee, on the Eastern Oregon Forest

Protection Association, on the Baker County Forestland Classification Committee, among other boards and committees.

"They are a big part of our success in the Northeast Oregon District, with their volunteer efforts," Knight said.

Asked why the participation, Dean Defrees said, "We like to put some of our personal input into those committees, and we feel like we really need to give back to the community."

He added: "It has been a real partnership for us, because we don't have all the answers, and the Oregon Department of Forestry, OSU Extension and Oregon Small Woodlands Association have been really helpful, as far as technical advice."

The Defrees family's legacy of sustainable land management dates back to Dean's great grandparents, who settled on the land in 1904. In the 1930s, when other ranchers in the Sumpter Valley sold land to gold mining companies to be dredged, Albert and Ellen Defrees, Dean's grandparents, refused.



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COMBINES	COMBINES	COMBINES
<p>JD 9770, 3079 hours, small grain, 35% Rahto leveler, 630R platform & cart.....\$225,000 Colfax OS730470</p> <p>JD 9770, 3688 hours, small grain, level land, 635F platform and cart.....\$189,000 Colfax A0736737</p> <p>JD 5680, 1002 hours, small grain, 35% Rahto leveler, no platform \$463,300 Colfax 755718</p>	<p>JD 9870, 2355 hours, small grain, 27% Hilco leveler, duals, 635F platform and cart.....\$310,000 Colfax B0741601</p> <p>JD 9760, 2616 hours, small grain, 27% Hilco leveler, duals, 630R platform and cart. . \$130,000 Walla Walla 05710903</p> <p>JD 9870, 2335 hours, small grain, 35% Hilco leveler, duals, 635F platform and cart.....\$289,000 Colfax OS730229</p>	<p>JD 5680, 881 hours, small grain, 35% Rahto Leveler, 635F platform and cart.....\$429,900 Four Lakes 755668</p> <p>JD 9650, 3112 hours, small grain, 914PU platform, small wire concave.....\$49,000 McMinnville OS685800</p> <p>JD 5660, 196 hours, small grain, Vari-stream rotor, Powercast TB, 615P BPU platform.....\$363,700 Salem E0775100</p> <p>JD 9760, 2767 hours, Rahto 18% sidehill leveler, duals 4WD, straw chopper, contour master.....\$167,000 Tekoa 05715882</p> <p>Case IH 9230, 536 hours, Hilco 27% leveler, small grain, no platform.....\$430,000 Tekoa YEG622449</p>



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